

WHAT IS CLAIMED IS:

1. A system for capturing biometric data, comprising:
a non-planar prism configured to be illuminated by a light source; and
a scanning optical system configured to capture image data of a portion of a person interacting with the non-planar prism.
2. The system of claim 1, wherein the non planar prism comprises:
a curved portion configured to receive a biometric object of the person on a first surface and to totally internally reflect light beams from the light source from a second surface; and
a planar portion coupled at an angle to the curved portion through which the totally internally reflected light exits to be received by the scanning optical system.
3. The system of claim 1, wherein the scanning optical system rotates around an axis of symmetry of the non-planar prism.
4. The system of claim 1, wherein an element in the scanning optical system rotates a received image to perform the scanning.
5. The system of claim 4, wherein the element is an image rotator element selected from the group consisting of a dove prism and a Pachan prism.
6. The system of claim 1, wherein the scanning optical system moves along an arcuate path to capture radial scan line images transmitted through a base of the non-planar prism.

7. The system of claim 1, further comprising a processing system that converts the captured image data into transmittable information that is transmitted by the communications system.

8. The system of claim 7, wherein the communications system comprises a FIREWIRE system.

9. The system of claim 1, further comprising a processing system comprising a means for converting the captured image data from a first coordinate system into image data in a second coordinate system.

10. The system of claim 9, wherein the first coordinate system is a surface of the non-planar prism and the second coordinate system is a planar coordinate system.

11. The system of claim 1, further comprising an encoder configured to encode a position of the scanning optical system and to generate encoder data.

12. The system of claim 1, wherein the scanning optical system comprises a control system configured to control a motor, belt, and pulley system.

13. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture a palm print image as the image data.

14. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture palm print and fingerprint images as the image data.

15. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture both palm print images as the image data.

16. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture both sets of palm print images and fingerprint images as the image data.

17. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture palm print, fingerprint, and target images as the image data.

18. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture a writer's palm image as the image data.

19. The system of claim 1, wherein the non-planar prism and the scanning optical system are configured to capture a writer's palm and fingertip images as the image data.

20. The system of claim 1, wherein the light source is positioned to direct light from the light source to an inside surface of a curved portion of the non-planar prism configured to totally internally reflect the light so that the light exits a planar portion of the non-planar prism.

21. The system of claim 20, wherein:
the curved portion has a surface area sized to receive one or more hands; and
the planar portion is located at an angle with respect to the curved portion and has a smaller surface area than the curved portion.
22. The system of claim 1, wherein the light source is positioned within a cylindrical opening running along an axis of symmetry of the prism.
23. The system of claim 1, wherein the light source is positioned proximate a chamfered edge of the prism.
24. The system of claim 1, wherein the system further comprises first and second processing systems that are coupled via a communications system via at least one of an Internet, an Intranet, a hardwire connection, a wireless system, a FIREWIRE transceiver, a USB transceiver, and an Ethernet.
25. The system of claim 1, further comprising an air treatment system positioned proximate the non-planar prism.
26. The system of claim 25, wherein the air treatment system performs one of heating, sanitizing, ionizing, and dehumidifying of the non-planar prism and/or the portion of the person.

27. A system for capturing biometric data comprising:
a non-planar prism configured to totally internally reflect light from a curved portion, such that the totally internally reflected light exists a planar portion; and
an image capturing system that receives the totally internally reflected light and generated image data therefrom of a person interacting with the curved portion.
28. The system of claim 27, wherein the image capturing system comprises a stationary lens and a stationary large area array.
29. The system of claim 28, wherein the lens is sized to capture all light leaving the non-planar prism that has been totally internally reflected from a section of the non-planar prism proximate an area in which the person interacted with the non-planar prism.
30. The system of claim 27, wherein the image capturing system rotates around an axis of symmetry of the non-planar prism.